

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Major, Municipal permit. The discharge will result from the operation of a proposed wastewater treatment plant with possible design flows of 0.3, 0.6, 1.0, 1.25, 1.5, 1.7, 2.0, and 2.5 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS and updating permit language, as appropriate, to reflect current boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Mountain Run WWTP
118 West Davis St, Suite 101
Culpeper, VA 22701
SIC Code : 4952 WWTP
Facility Location: Route 652 (Stevensburg Rd) County: Culpeper
Facility Contact Name: Paul Howard, Director of Environmental Services Telephone Number: (540) 727-3409
2. Permit No.: VA0090212 Expiration Date of previous permit: June 26, 2010
Other VPDES Permits associated with this facility: VAN020054
Other Permits associated with this facility: None
E2/E3/E4 Status: Not Applicable
3. Owner Name: Culpeper County
Owner Contact/Title: Jim Hoy, County Engineer Telephone Number: (540) 727-3409
4. Application Complete Date: 12/17/2010
Permit Drafted By: Alison Thompson Date Drafted: May 21, 2010
Draft Permit Reviewed By: Joan Crowther Date Reviewed: June 15, 2010
Public Comment Period : Start Date: 8/26/2010 End Date: 9/25/2010
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination
Receiving Stream Name : Mountain Run River Mile: 3-MTN012.82
Stream Basin: Rappahannock Subbasin: None
Section: 4 Stream Class: III
Special Standards: None Waterbody ID: VAN-E17R
7Q10 Low Flow: 0.10 MGD 7Q10 High Flow: 4.17 MGD
1Q10 Low Flow: 0.07 MGD 1Q10 High Flow: 2.9 MGD
Harmonic Mean Flow: 2.0 MGD 30Q5 Flow: 0.58 MGD
303(d) Listed: Yes 30Q10 Flow: 0.0 MGD
TMDL Approved: Yes (Bacteria) Date TMDL Approved: April 27, 2001
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	
7. Licensed Operator Requirements: Class II
8. Reliability Class: Class II

9. Permit Characterization:

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input checked="" type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input checked="" type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The proposed treatment for this facility shall include screening and grit removal followed by a 4-stage Bardenpho activated sludge process and clarification. The application indicates that ultraviolet disinfection will be utilized. The effluent will be post aerated and discharged to Mountain Run.

Note: DEQ-OWE staff issued a conditional approval CTC for the 2.5 MGD design flow on August 28, 2008. To date, no construction has commenced on this facility at any of the specified design flows.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Proposed Design Flows (MGD)	Outfall Latitude and Longitude
001	Domestic and/or Commercial Wastewater	See Item 10 above.	0.3, 0.6, 1.0, 1.25, 1.5, 1.7, 2.0, and 2.5	38° 28' 18" N 77° 52' 47" W
See Attachment 2 for (Culpeper East, DEQ #184B) topographic map.				

11. Sludge Treatment and Disposal Methods:

The application notes that sludge will be aerobically digested, dewatered with a belt press, and disposed of in an approved sanitary landfill.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2

VAG110101	Colonial Concrete Culpeper Plant discharge to Mountain Run, UT.
VA0085723	Culpeper Petroleum Cooperative discharge to Mountain Run, UT.
3-MTN028.68	DEQ Ambient Water Quality Monitoring Station at the spillway of Mountain Run Lake.
3-MTN027.08	DEQ Ambient Water Quality Monitoring Station at the Route 641 Bridge on Mountain Run.
3-MTN025.17	DEQ Ambient Water Quality Monitoring Station at Lake Pelham (the Town's drinking water reservoir).
VA0092002	Greens Corner WWTP discharge to Mountain Run, 1.89 miles downstream.
VA0061590	Town of Culpeper WWTP discharge to Mountain Run.
VAG840107	Luck Stone Culpeper Quarry discharge to Mountain Run and Potato Run, UT.
3-MTN003.31	DEQ Ambient Water Quality Monitoring Station at the Route 672 Bridge on Mountain Run.

3-MTN000.59	DEQ Ambient Water Quality Monitoring Station at the Route 620 Bridge on Mountain Run.
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13. Material Storage:

There is no material storage since the facility is not built at this time.

14. Site Inspection:

Since the facility is not constructed, there have been no recent site inspections.

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

This facility discharges into Mountain Run at Segment VAN-E09R_MTN02A04, which extends from the confluence with Jonas Run to the confluence with Flat Run. While there are no DEQ monitoring stations specifically located on this segment of Mountain Run, this segment has been assessed using monitoring stations located in adjacent segments. Below is a monitoring summary for VAN-E09R_MTN02A04 as taken from the 2008 Integrated Assessment: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The aquatic life is impaired based on benthic monitoring along neighboring assessment units. The recreation and wildlife uses were not assessed.

The nearest downstream DEQ monitoring station with ambient data is Station 3-MTN000.59, located at the Route 620 bridge crossing. Station 3-MTN000.59 is located approximately 11.4 rivermiles downstream from the outfall of VA0090212. This station is located in segment VAN-E09R_MTN01A00, which extends from the confluence with Flat Run, to the confluence with the Rappahannock River. Additionally, a probabilistic monitoring station (3-MTN003.31) and a fish tissue/sediment station (3-MTN005.79) are also located in this segment. Below is a monitoring summary for Segment VAN-E09R_MTN01A00 as taken from the 2008 Integrated Assessment.

A fecal coliform TMDL for the Mountain Run watershed has been submitted and approved. *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.

Benthic macroinvertebrate biological monitoring finds the aquatic life use to be not supported. Additionally, the aquatic life use is noted with an observed effect, as an excursion of the consensus PEC freshwater sediment screening value (SV) of 128 parts per million (ppm, dry weight) for lead (Pb) in sediment was recorded from a sediment sample collected in 2003 at monitoring station 3-MTN003.31.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. Additionally, exceedances of the water quality criterion based tissue value (TV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue was recorded in one species of fish (4 total samples) collected in 2001 and 2006 at monitoring station 3-MTN005.79 (American eel). SPMD deployment at station 3-MTN003.31, in 2003, also resulted in concentrations above the surface water criterion for total PCBs of 1,700 pg/L.

The wildlife use is considered fully supporting.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2008 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law in 2005 to include provisions addressing nutrient loadings to the Chesapeake Bay. This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

The full planning statement can be found in the reissuance file.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Mountain Run is located within Section 4 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 3 details other water quality criteria applicable to the receiving stream.

Ammonia:

The freshwater aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream. During the previous reissuance, ambient monitoring data collected at 3-MTN003.31 (January 2001 – November 2003) downstream of the Town of Culpeper's discharge were evaluated for pH and temperature.

During the 2006 permit modification, newer ambient monitoring data collected by the Town of Culpeper for the period of July 2004 – June 2006 (Attachment 4) were used to recalculate the ammonia criteria. The newly calculated criteria were as follows:

Winter:	Acute 28 mg/l	Chronic 3.7 mg/l
Summer:	Acute 28 mg/l	Chronic 2.7 mg/l

The recalculated criteria are the same as those for the receiving stream in the vicinity of Culpeper County's Greens Corner WWTP and the Town of Culpeper's WWTP. Due to the close proximity of the three facilities, staff believes that it is important that the criteria determinations in the three permits are consistent. With this reissuance, staff reviewed more recent ambient data. The limited data collected during the past 3 years does not differ significantly; therefore, the pH and temperature values, and subsequent ammonia criteria shall be carried forward with this reissuance.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The average hardness of the receiving stream is 66.6 mg/l based on ambient monitoring data collected from July 2004 – June 2006. The hardness-dependent metals criteria shown in Attachment 3 are based on this value.

Bacteria Criteria:

The Virginia Water Quality Standards (9VAC25-260-170 A.) states that the following criteria shall apply to protect primary recreational uses in surface waters:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean ¹
Freshwater <i>E. coli</i> (N/100 ml)	126

¹For a minimum of four weekly samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Mountain Run, is located within Section 4 of the Rappahannock River Basin. This section has been designated with no special standards.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on May 20, 2010, for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect any threatened and endangered species that might be identified in the future near the discharge.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the fact that there is a benthic impairment for Mountain Run. Additionally, the stream is dominated by effluent from the Town of Culpeper's discharge during low flow periods and the discharge from the Mountain Run STP will increase the Instream Waste Concentration of the sewage treatment plant effluents. The 7Q10 flow for Mountain Run is 0.1 MGD where as the Town's WPCF has a design flow of 6.0 MGD and the proposed discharge from Mountain Run will be as high as 2.5 MGD. Also, the effluent limits for the facilities are derived to meet and maintain the Water Quality Standards.

Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. Because the critical stream flows are very small in comparison to the flows from the WWTP, no dilution is used to derive the effluent limitations, and the WLA's are equal to the WQS.

The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

The facility is not built so there is no effluent data to review. The following pollutants require a wasteload allocation analysis since this is a proposed wastewater treatment facility treating domestic sewage: Ammonia as N.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C_o	=	In-stream water quality criteria
Q_e	=	Design flow
Q_s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia, and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C_s	=	Mean background concentration of parameter in the receiving stream.

Because the critical stream flows are very small in comparison to the flows from the WWTP, no dilution is used to derive the effluent limitations. As such, there is no mixing zone and the WLA is equal to the water quality criteria.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

At all design flows, the TKN limit of 3.0 mg/L for summer ensures adequate protection of the ammonia criteria, and no ammonia limit is needed. However, ammonia limits are needed during winter as the TKN limit of 8.0 mg/L from the dissolved oxygen modeling is not stringent enough to protect the ammonia criteria during the winter months. Staff proposes to carry forward the existing winter ammonia limits at all flow tiers. DEQ guidance suggests using a sole data point of 10.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge. As such, an ammonia monthly average limit of 3.7 mg/L is needed in winter (December – May) at all flow tiers to protect the chronic water quality criteria (Attachment 5). No ammonia limits are needed in summer, as the TKN limit of 3.0 mg/L ensures adequate protection of the ammonia criteria.

At the 0.3, 0.6, and 1.5 MGD design flows, the existing TKN limit of 3.0 mg/L for summer, and 8.0 mg/L for winter is based on modeling conducted during June 1999 and March 2005, and is adequate to protect the DO criteria. The weekly average limit will be 4.5 mg/L for summer and 12.0 mg/L for winter based on a multiplier of 1.5 times the monthly average.

At the 1.0, 1.25, 1.7, 2.0, and 2.5 MGD design flows, the TKN limit of 3.0 mg/L for summer and 8.0 mg/L for winter is based on modeling conducted in August and September 2006, and is adequate to protect the DO criteria. The weekly average limit will be 4.5 mg/L for summer and 12.0 mg/L for winter based on a multiplier of 1.5 times the monthly average.

The model runs can be found in Attachment 6.

2) Metals/Organics:

Since the facility is not built, there are no data to review. The facility will perform testing once the CTO is issued and the need for limits shall be assessed at that time.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (DO), carbonaceous biochemical oxygen demand-5 day (CBOD₅), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed.

Dissolved Oxygen, cBOD₅, and TKN limitations for all flow tiers are based on stream modeling conducted in June 1999, March 2005, and August and September 2006 (Attachment 6) and are set to meet the water quality criteria for DO in the receiving stream. The model was run multiple times to assess various combinations of design flows for both the Town and County. The Town's WWTP was set at 6.0 MGD and Greens Corner STP (formerly known as High School) and Mountain Run WWTPs at combinations totaling 2.6 MGD. The model was also run to assess seasonal effects. All model runs assume that Mountain Run is at 7Q10 flows during winter and summer periods and that discharge flows are at their maximum. While this scenario is relatively unlikely, it is a reasonable worst case scenario that assures the effluent will not cause a violation of the DO criteria even under extreme conditions.

Attachment 6 is the model summary for the following combination of flows: Town WWTP at 6.0 MGD, High School WWTP at 1.25 MGD, and Mountain Run WWTP at 1.25 MGD. The results of this run are indicative of all the other runs, being that the results varied little and the cBOD₅, TKN, and DO limits listed here are protective at all of the other flow combinations.

It is staff's practice to equate the Total Suspended Solids limits with the CBOD₅ limits. TSS limits are established to equal BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170 and the TMDL for Mountain Run which was originally approved in 2001 and was modified in 2009. This facility was given a WLA of 1.35E+12 cfu/year of *E. coli* bacteria in the modified TMDL. This is equivalent to the facility discharging at its maximum design flow (2.5 MGD) with an *E. coli* limit of 39 cfu/100mL; therefore, an effluent limitation of 39 cfu/cmL will be established for all design flows.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. There are three regulations that necessitate the inclusion of nutrient limitations:

- 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires new or expanding discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).
- 9VAC25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥ 0.5 MGD above the fall line and ≥ 0.1 MGD below the fall line. This regulation limits the total nitrogen and total phosphorus mass loadings from these discharges. This facility received two allocations; one at 1.5 MGD and one at 2.5 MGD. If the facility does not have a CTO for the 2.5 MGD facility by December 31, 2010, the allocation for the 2.5 MGD facility is lost and the allocation becomes 1.5 MGD. To date, no construction has commenced, so the concentration limits in this draft permit are drafted on the assumption that the allocation shall be for a 1.5 MGD facility.
- 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* became effective January 1, 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN020054.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen (TKN), Total Nitrogen, and Total Phosphorus are included in this permit; limits were established for TKN, Total Nitrogen, and Total Phosphorus. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820.

Annual average effluent limitations, as well as monthly and year-to-date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit.

For the 0.3 MGD tier, the annual average Total Nitrogen is 8.0 mg/L and the annual average Total Phosphorus is 1.0 mg/L. These limits are based on 9VAC25-40 for new discharges less than 0.5 MGD.

For the 0.6, 1.0, 1.25, and 1.5 MGD tiers, the annual average Total Nitrogen is 4.0 mg/L and the annual average Total Phosphorus is 0.30 mg/L. These limits are based on 9VAC25-40 and also based on the concentrations used to derive the WQMP loadings for this facility.

For the 1.7, 2.0, and 2.5 MGD tiers, the annual average Total Nitrogen is 3.0 mg/L and the annual average Total Phosphorus is 0.30 mg/L. These limits are based on 9VAC25-40 requiring SOA treatment for significant dischargers expanding beyond their WQMP allocations.

****NOTE****

On August 5, 2010 the County communicated to DEQ that they were negotiating a transfer of the Mountain Run nutrient allocation to the Town of Culpeper's STP. On August 19, 2010, the County confirmed to DEQ that they had reached a nutrient allocation consolidation agreement with the Town that places the County's 1.5 MGD Total Nitrogen and Total Phosphorus allocations into the Town's plant (VA0061590). Since the allocation will be associated with the Town's STP, the Mountain Run STP will no longer have a nutrient allocation specific for Mountain Run STP. The facility will be required to treat to SOA at all flow tiers except for the 0.3 MGD tier as required in 9 VAC25-40 for STPs with flows greater than 0.5 MGD. The County shall also be required to submit an offset plan prior to the issuance of the CTO for any of the eight flow tiers. An offset special condition has been included with this draft permit.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, CBOD₅, Total Suspended Solids, TKN, Ammonia, pH, Dissolved Oxygen, *E. coli*, Total Nitrogen, Total Phosphorus, and Dissolved Oxygen.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for TKN monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 8.345.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.3 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date or the issuance of the CTO for the 0.6, 1.0, 1.25, 1.5, 1.7, 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 14 kg/day	18 mg/L 20 kg/day	NA	NA	3D/W	8H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 9.1 kg/day	12 mg/L 14 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 14 kg/day	18 mg/L 20 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 9.1 kg/day	12 mg/L 14 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 20 lb/day	14 mg/L 35 lb/day	NA	NA	3D/W	8H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 7.5 lb/day	4.5 mg/L 11 lb/day	NA	NA	3D/W	8H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	3D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	8.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	1.0 mg/L	NA	NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.*NA* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.*TIRE* = Totalizing, indicating and recording equipment.*1/D* = Once every day.*1/M* = Once every month.*1/2W* = Once every two weeks.*3D/W* = Three days a week.*1/YR* = Once every calendar year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.6 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 0.6 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 1.0, 1.25, 1.5, 1.7, 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 27 kg/day	18 mg/L 41 kg/day	NA	NA	3D/W	8H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 18 kg/day	12 mg/L 27 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 27 kg/day	18 mg/L 41 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 18 kg/day	12 mg/L 27 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 40 lb/day	12 mg/L 60 lb/day	NA	NA	3D/W	8H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 15 lb/day	4.5 mg/L 22 lb/day	NA	NA	3D/W	8H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	3D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/2W	8H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated

The basis for the limitations codes are:

1. Federal Effluent Requirements
 2. Best Professional Judgment
 3. Water Quality Standards
 4. DEQ Disinfection Guidance
 5. Stream Model- Attachment 6
 6. 9VAC25-40 (Nutrient Regulation)
- MGD* = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

- 1/D* = Once every day.
1/M = Once every month.
1/2W = Once every two weeks.
3D/W = Three days a week.
1/YR = Once every calendar year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 1.0 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 1.0 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 1.25, 1.5, 1.7, 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 45 kg/day	18 mg/L 68 kg/day	NA	NA	5D/W	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 30 kg/day	12 mg/L 45 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 45 kg/day	18 mg/L 68 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 30 kg/day	12 mg/L 45 kg/day	NA	NA	5D/W	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 67 lb/day	12 mg/L 100 lb/day	NA	NA	5D/W	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 25 lb/day	4.5 mg/L 38 lb/day	NA	NA	5D/W	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	5D/W	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

5D/W = Five days a week.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 1.25 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 1.25 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 1.5, 1.7, 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 57 kg/day	18 mg/L 85 kg/day	NA	NA	5D/W	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 38 kg/day	12 mg/L 57 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 57 kg/day	18 mg/L 85 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 38 kg/day	12 mg/L 57 kg/day	NA	NA	5D/W	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 83 lb/day	12 mg/L 125 lb/day	NA	NA	5D/W	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 31 lb/day	4.5 mg/L 47 lb/day	NA	NA	5D/W	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	5D/W	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

5D/W = Five days a week.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 1.5 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 1.5 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 1.7, 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 68 kg/day	18 mg/L 102 kg/day	NA	NA	5D/W	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 45 kg/day	12 mg/L 68 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 68 kg/day	18 mg/L 102 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 45 kg/day	12 mg/L 68 kg/day	NA	NA	5D/W	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 100 lb/day	12 mg/L 150 lb/day	NA	NA	5D/W	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 38 lb/day	4.5 mg/L 56 lb/day	NA	NA	5D/W	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	5D/W	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

5D/W = Five days a week.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 1.7 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 1.7 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 2.0 or 2.5 MGD flow tiers, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 77 kg/day	18 mg/L 120 kg/day	NA	NA	5D/W	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 51 kg/day	12 mg/L 77 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 77 kg/day	18 mg/L 120 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 51 kg/day	12 mg/L 77/kg/day	NA	NA	5D/W	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 113 lb/day	12 mg/L 170 lb/day	NA	NA	5D/W	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 42 lb/day	4.5 mg/L 64 lb/day	NA	NA	5D/W	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	5D/W	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

5D/W = Five days a week.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 2.0 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 2.0 MGD tier and lasting until the expiration date of the permit or the issuance of the CTO for the 2.5 MGD flow tier, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 91kg/day	18 mg/L 136 kg/day	NA	NA	5D/W	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 60 kg/day	12 mg/L 91 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 91 kg/day	18 mg/L 136 kg/day	NA	NA	5D/W	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 60 kg/day	12 mg/L 91 kg/day	NA	NA	5D/W	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 134 lb/day	12 mg/L 200 lb/day	NA	NA	5D/W	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 50 lb/day	4.5 mg/L 75 lb/day	NA	NA	5D/W	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	5D/W	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	5D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

5D/W = Five days a week.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 2.5 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 2.5 MGD tier and lasting until the expiration date of the permit.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅ (Dec-May)	3,5	12 mg/L 110 kg/day	18 mg/L 170 kg/day	NA	NA	1/D	24H-C
CBOD ₅ (Jun-Nov)	3,5	8 mg/L 76 kg/day	12 mg/L 110 kg/day	NA	NA	1/D	24H-C
Total Suspended Solids (Dec-May)	2	12 mg/L 110 kg/day	18 mg/L 170 kg/day	NA	NA	1/D	24H-C
Total Suspended Solids (Jun-Nov)	2	8.0 mg/L 76 kg/day	12 mg/L 110 kg/day	NA	NA	1/D	24H-C
Dissolved Oxygen	3	NA	NA	6.5 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (Dec-May)	3,5	8.0 mg/L 167 lb/day	12 mg/L 250 lb/day	NA	NA	1/D	24H-C
Total Kjeldahl Nitrogen (Jun-Nov)	3,5	3.0 mg/L 63 lb/day	4.5 mg/L 94 lb/day	NA	NA	1/D	24H-C
Ammonia, as N	3,5	3.7 mg/L	4.5 mg/L	NA	NA	1/D	24H-C
<i>E. coli</i> (Geometric Mean)	3	39 n/100mls	NA	NA	NA	1/D	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/W	24H-C
Total Nitrogen ^a	3, 6	NL mg/L	NA	NA	NA	1/W	Calculated
Total Nitrogen – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b	3, 6	3.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/W	24H-C
Total Phosphorus – Year to Date ^b	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b	3, 6	0.30 mg/L	NA	NA	NA	1/YR	Calculated
Chronic Toxicity – <i>C. dubia</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C
Chronic Toxicity – <i>P. promelas</i> (TU _c)		NA	NA	NA	NL	1/3M	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 6
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.

1/W = Once every week.

1/M = Once every month.

1/3M = Once every three months.

1/YR = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

20. Other Permit Requirements:

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

- b) Permit Section Part I.C., details the requirements for a Pretreatment Program Toxics Management Program. The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.D. requires all discharges to protect water quality. The VPDES Permit Regulation at 9VAC25-31-730. through 900., and 40 CFR Part 403 requires POTWs with a design flow of >5 MGD and receiving from Industrial Users (IUs) pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards to develop a pretreatment program.

The facility shall be required to perform an industrial user's survey once any CTO is issued for the facility. If Categorical or Significant Industrial Users are identified, the County shall be required to develop an approvable pretreatment program. Program requirements are found in this section of the permit.

- c) Permit Section Part I.D., details the requirements for the Toxics Management Program. The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC, and receiving stream characteristics.

Since the facility has six proposed design flows of ≥ 1.0 MGD, toxicity monitoring shall be included in the reissued permit. See Attachment 7 for the WETLIM analysis.

21. Other Special Conditions :

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a proposed POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. Within 90 days of the CTO, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.
- f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.
- g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.
- h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.
- i) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- j) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- k) In-stream Monitoring. The State Water Control Law at §62.1-44.21 authorizes the State Water Control Board to request information needed to determine the discharge's impact on State Waters. No receiving stream data are currently available; therefore, in-stream monitoring is being required to assess background levels. This monitoring data may be used to derive water quality criteria dependent upon the receiving stream characteristics as well as assess compliance with such water quality criteria as changes in temperature.
- l) Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.
- m) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

- n) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- o) Discharge Monitoring Report Submittal. For proposed facilities such as this, Discharge Monitoring Reports (DMR) shall be submitted annually, by no later than January 10th of each year until such time as a Certificate to Operate (CTO) has been issued. DMR forms shall be labeled "Not Built – No Discharge" until discharge at this facility has commenced.
- p) Maximum Combined Design Flows. This facility will discharge directly to Mountain Run which has a bacterial impairment for bacteria. A Fecal Coliform TMDL for Mountain Run was approved by EPA on April 27, 2001, and it included a WLA of 200 cfu/100 mls for the proposed Mountain Run WWTP based on the 0.3 MGD design flow. However, the TMDL did not account for growth within the watershed; Greens Corner High School (HS) WWTP did not have a WLA for fecal coliform. In 2009, the TMDL was modified to accommodate new and expanding discharges. The Dissolved Oxygen modeling for the stream was also performed assuming a maximum combined design flow of 2.6 MGD for this facility and the HS. Therefore, to protect the WQS for Mountain Run, the total combined design flows for the Mountain Run WWTP and the Greens Corner HS WWTP shall not exceed 2.6 MGD.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
- b) Monitoring and Effluent Limitations:
 - 1) The Fecal Coliform limits and monitoring were removed since *E. coli* is now limited. The *E. coli* limit is based on the approved TMDL for Mountain Run.
 - 2) All limits are now expressed as two significant figures.
 - 3) The loading limits for TKN are now expressed in lb/day in lieu of kg/day.
 - 4) Orthophosphate monitoring has been removed since it is monitored through VAN020054.
 - 5) If the facility does not have a CTO for the 2.5 MGD facility by December 31, 2010, the allocation for the 2.5 MGD facility is lost and the allocation becomes 1.5 MGD. To date, no construction has commenced, so the concentration limits in this draft permit are drafted on the assumption that the allocation shall be for a 1.5 MGD facility. This makes the annual average TN concentration for the 1.7, 2.0 and 2.5 MGD tiers 3.0 mg/L instead of 4.0 mg/L.
 - 6) The annual average TN concentration for the 0.6, 1.0, 1.25 and 1.5 MGD tiers was changed from 4.0 mg/L to 3.0 mg/L since a nutrient allocation consolidation agreement was signed between Culpeper County and the Town of Culpeper.

24. Variances/Alternate Limits or Conditions:

None

25. Public Notice Information:

First Public Notice Date: 8/26/2010

Second Public Notice Date: 9/2/2010

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3834, Alison.Thompson@deq.virginia.gov. See Attachment 8 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

Segments VAN-E09R_MTN02A04 and VAN-E09R_MTN01A00: Impaired for not meeting the fish consumption use due to PCBs in fish tissue. The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected stretch of Mountain Run extends roughly 19 miles, from the Route 15/29 bridge crossing near Culpeper City downstream until the confluence with the Rappahannock River. This TMDL is due in 2018.

Segments VAN-E09R_MTN02A04 and VAN-E09R_MTN01A00: Impaired for not meeting the aquatic life use due to poor health in the benthic biological community. A total of three biological monitoring events at Station 3-MTN003.31 in 2003 and 2004 resulted in a VSCI score which indicates an impaired macroinvertebrate community. This TMDL is due in 2020.

VAN-E09R_MTN01A00: Impaired for not meeting the recreational use due to exceedances of the bacteria criterion for *E. coli*. Sufficient excursions from the maximum *E. coli* bacteria criterion (6 of 16 samples - 37.5%) were recorded at DEQ's ambient water quality monitoring station (3-MTN000.59) at the Route 620 crossing to assess this stream segment as not supporting of the recreation use goal for the 2008 water quality assessment.

The bacteria TMDL for the Mountain Run watershed was completed in 2001. The Fecal Coliform TMDL for Mountain Run was approved by EPA on April 27, 2001, and it included a WLA of 200 cfu/100 mls for the proposed Mountain Run WWTP based on the 0.3 MGD design flow. However, the TMDL did not account for growth within the watershed; the Greens Corner High School (HS) WWTP did not have a WLA for fecal coliform in the original TMDL modeling. In 2009, the TMDL was modified to accommodate new and expanding discharges. In 2009, the TMDL was modified to accommodate new and expanding discharges. The TMDL Modification gave this facility a WLA of **1.35E+12 cfu/year of *E. coli* bacteria**. This is equivalent to the facility discharging at its maximum design flow (2.5 MGD) with an *E. coli* limit of 39 cfu/100mL.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): None.

Staff Comments: None.

Public Comment: DEQ received one comment letter from the Culpeper Soil & Water Conservation District. They had questions concerning reissuing a permit for an un-built facility, about how disinfection occurs at a STP and how this permit related to the VPDES permit for Greens Corner STP. DEQ answered all their questions and offered to meet with their Board to discuss VPDES permitting.

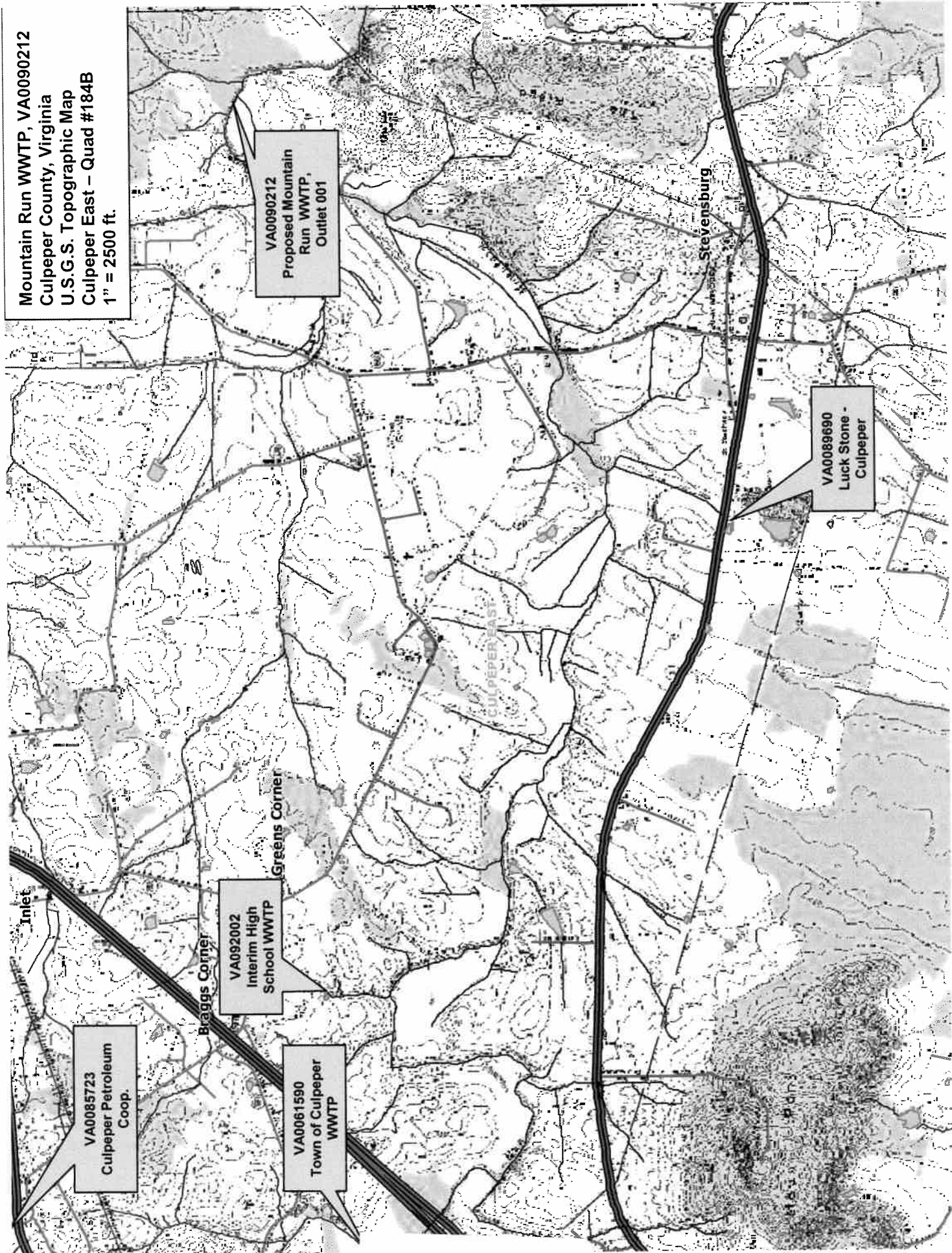
EPA Checklist: The checklist can be found in Attachment 9.

Mountain Run Flow Data (1950 - 1997)
Based on Flow Determination Memo - April 9, 1999

SITEID	NAME	Drainage Area	Harmonic Mean	High Flow 7Q10	High Flow 1Q10	30Q5	7Q10	1Q10	30Q10*	1Q30
01665000	Mountain Run near Culpeper, Va. - Unregulated	15.9	4	3.7	2.7	0.7	0.2	0.14		N/A
01665000	Mountain Run near Culpeper, Va. - Regulated	15.9	6.4	3.6	2.9	1.9	1	0.79	1.1	N/A
	Mountain Run @ Lake Pelham	8	2	1.9	1.4	0.35	0.1	0.07	0.36	N/A
		23.9	8.4	5.5	4.3	2.25	1.1	0.86	1.46	
	Water Withdrawal from Lake Pelham	-	-	1.9	1.9	1.9	1.9	1.9	1.9	
	Mountain Run flow below Dam	23.9	0.00	3.60	2.40	0.35	0.00	0.00	0.00	
	Mountain Run @ Town of Culpeper WWTP ** (Drainage Area Comparison based on unregulated data from 1950 - 1958)	12.3	3.09	2.86	2.09	0.54	0.15	0.11	N/A	cfs
	Add flow below Dam		3.09	6.46	4.49	0.89	0.15	0.11	N/A	cfs
			2.00	4.17	2.90	0.58	0.10	0.07	N/A	mgd

* 30Q10 flow as per G. Powell - 3/8/04

** Drainage Area from dam to Culpeper WWTP



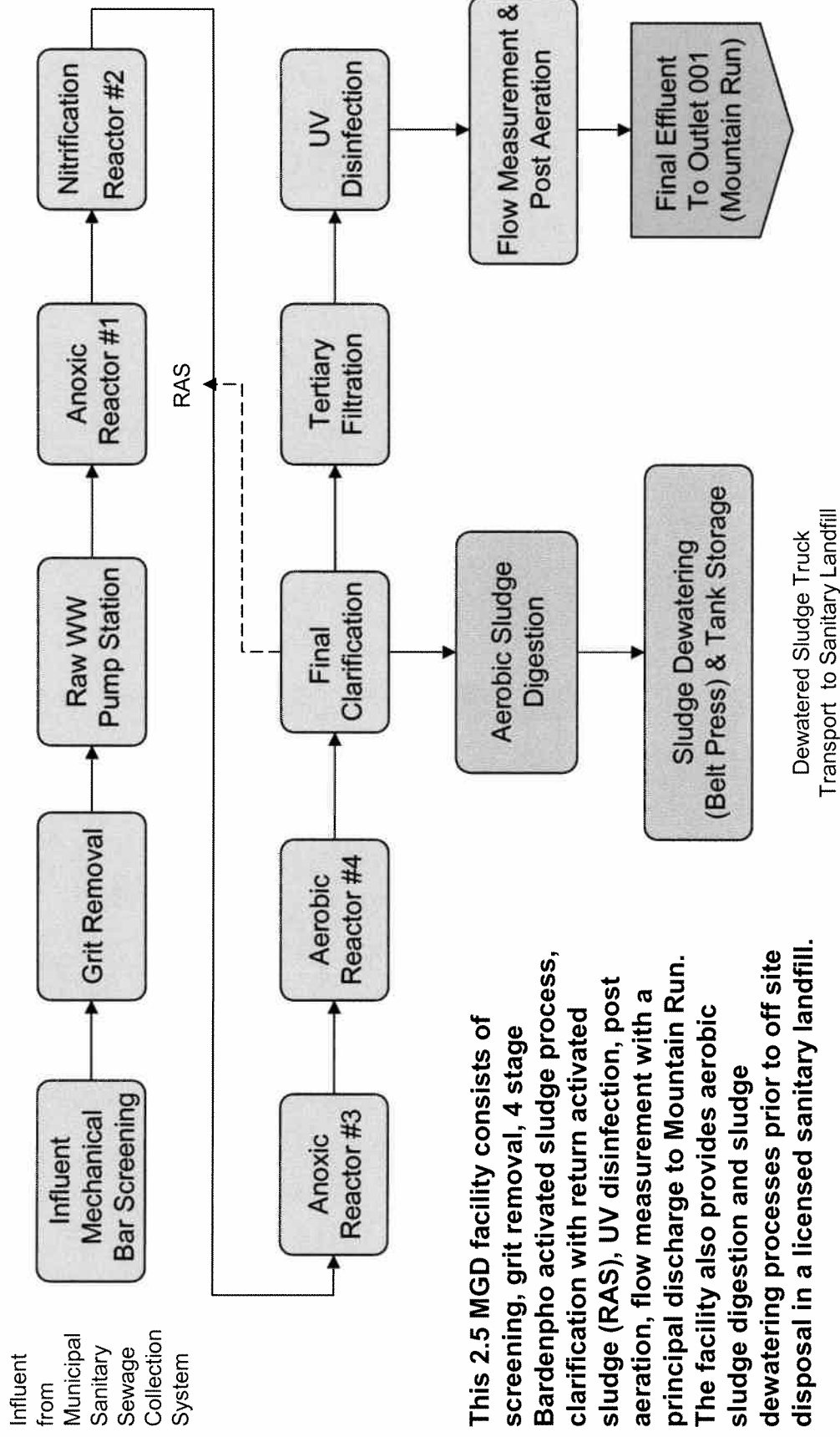
Mountain Run WWTP, VA0090212
Culpeper County, Virginia
U.S.G.S. Topographic Map
Culpeper East - Quad #184B
1" = 2500 ft.

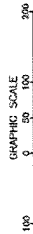
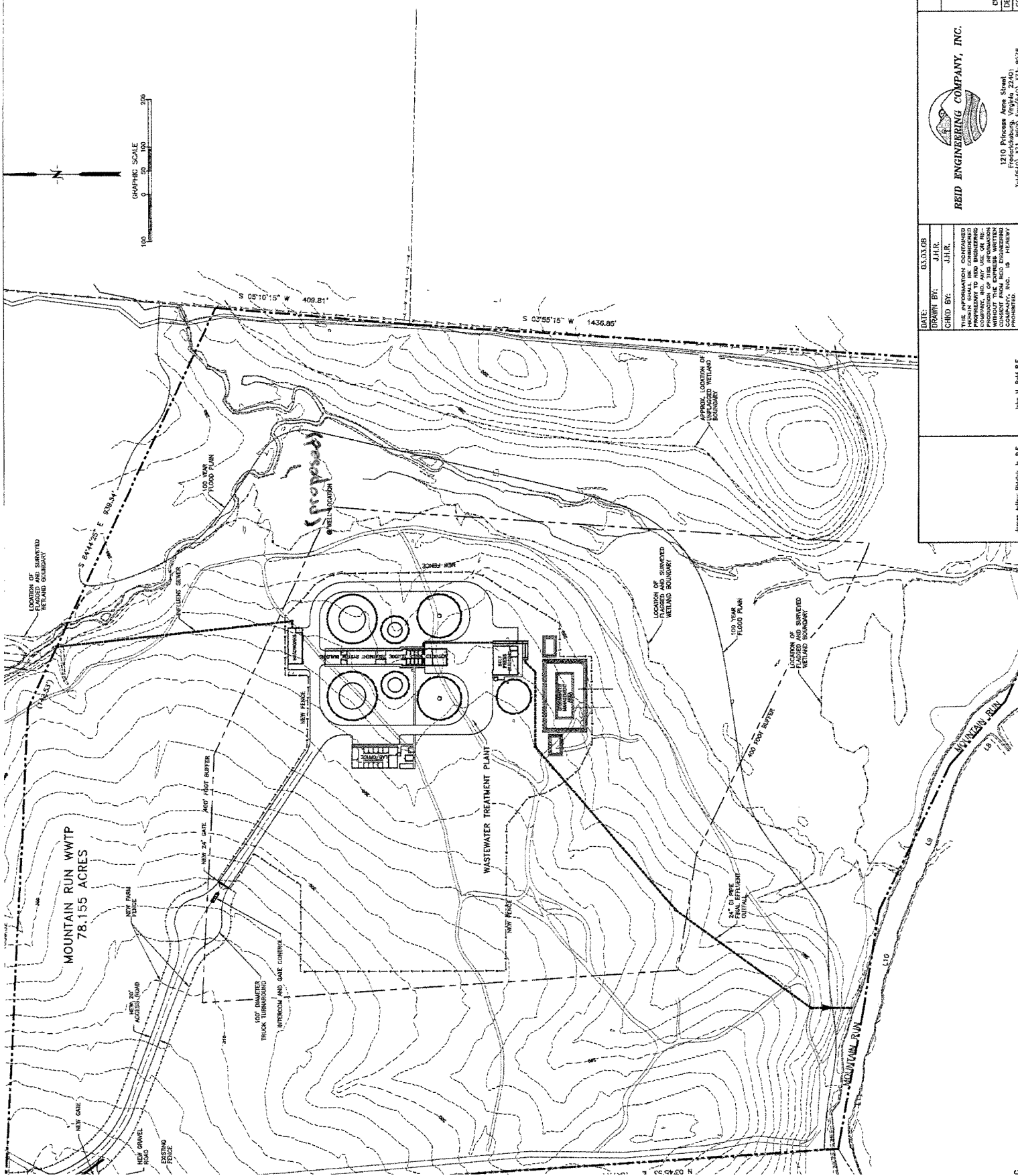
Culpeper County

Mountain Run Wastewater Treatment Facility

VA0090212


Process Flow Diagram

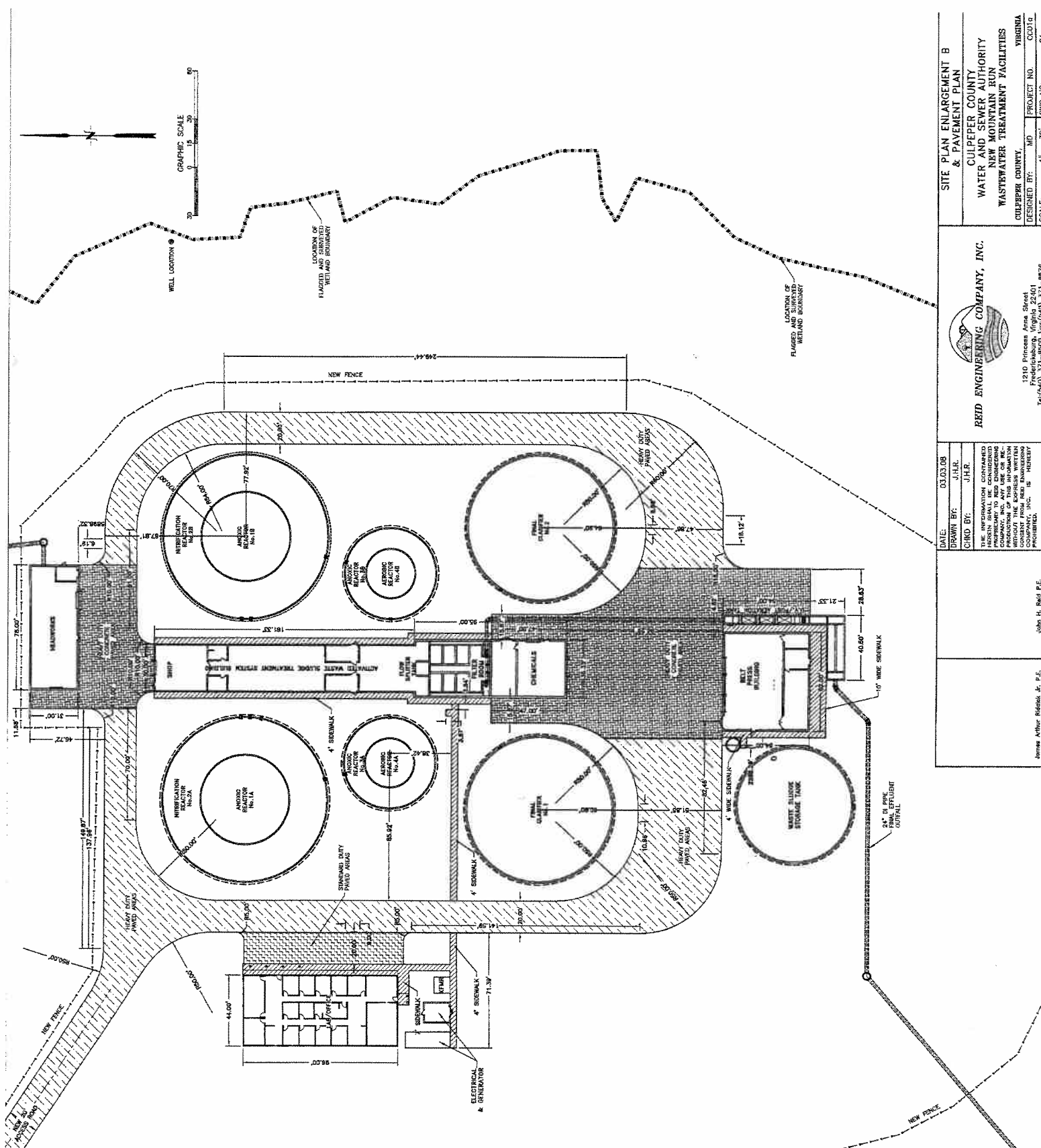




MOUNTAIN RUN WWTP
78.155 ACRES

WASTEWATER TREATMENT PLANT

DATE: 03.03.09 DRAWN BY: J.H.R. CHECK BY: J.H.R. THE INFORMATION CONTAINED HEREIN SHALL BE CONSIDERED VALID FOR THE PROJECT ONLY AND IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN CONSENT FROM REID ENGINEERING COMPANY, INC. IS HEREBY FURNISHED.	SITE PLAN ENLARGEMENT A
JOHN H. REID, P.E. JOHN ARTHUR BUCKLE, JR., P.E.	REID ENGINEERING COMPANY, INC.  1210 Princess Anne Street Fredericksburg, Virginia 22401 Tel: (540) 371-8550 Fax: (540) 371-8578 CULPEPER COUNTY WATER AND SEWER AUTHORITY NEW NEW MOUNTAIN RUN WASTEWATER TREATMENT FACILITIES CULPEPER COUNTY, VIRGINIA DESIGNED BY: MD PROJECT NO.: 02019 SCALE: 1" = 100' DWG NO.: CB



DATE: 03.03.08 DRAWN BY: JHR CHECK BY: JHR	SITE PLAN ENLARGEMENT B & PAVEMENT PLAN	
	CULPEPER COUNTY WATER AND SEWER AUTHORITY NEW MOUNTAIN RUN WASTEWATER TREATMENT FACILITIES	
	DESIGNED BY: MD PROJECT NO: C0102	CULPEPER COUNTY VIRGINIA
	SCALE: 1" = 30' DWG NO: C4	1210 Princess Anne Street Chesapeake, Virginia 22041 Tel: (410) 371-0858 Fax: (410) 371-0876

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John H. Reid P.E.
James Arthur Redick, Jr. P.E.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Mountain Run STP

Permit No.: VA0090212

Receiving Stream: Mountain Run

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO ₃) =	66.6 mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO ₃) =	66.6 mg/L	
90% Temperature (Annual) =	25 deg C		7Q10 (Annual) =	0 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	25 deg C	
90% Temperature (Wet season) =	20 deg C		30Q10 (Annual) =	0 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	20 deg C	
90% Maximum pH =	7.25 SU		1Q10 (Wet season) =	0 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	7.25 SU	
10% Maximum pH =	6.3 SU		30Q10 (Wet season)	0 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	6.3 SU	
Tier Designation (1 or 2) =	1		30Q5 =	0 MGD					Discharge Flow =	2.5 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	na
Acrylonitrile ^C	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	na
Aldrin ^C	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	3.0E+00	--	na
Ammonia-N (mg/l) (Yearly)	0	2.79E+01	2.66E+00	na	--	2.8E+01	2.7E+00	na	--	--	--	--	--	2.8E+01	2.7E+00	na
Ammonia-N (mg/l) (High Flow)	0	2.79E+01	3.68E+00	na	--	2.8E+01	3.7E+00	na	--	--	--	--	--	2.8E+01	3.7E+00	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	3.4E+02	1.5E+02	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene ^C	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	na
Benzidine ^C	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	na
Benzo (a) anthracene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (b) fluoranthene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (k) fluoranthene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (a) pyrene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether ^C	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether ^C	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	na
Bis 2-Ethylhexyl Phthalate ^C	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	na
Bromoform ^C	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	na
Cadmium	0	2.5E+00	8.2E-01	na	--	2.5E+00	8.2E-01	na	--	--	--	--	--	2.5E+00	8.2E-01	na
Carbon Tetrachloride ^C	0	--	--	na	1.6E-01	--	--	na	1.6E-01	--	--	--	--	--	--	na
Chlordane ^C	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	2.4E+00	4.3E-03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	8.6E+05	2.3E+05	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	1.9E+01	1.1E+01	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wastload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Chlorodibromomethane ^C	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	na
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	na
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	na
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	na
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	8.3E-02	4.1E-02	na
Chromium III	0	4.1E+02	5.3E+01	na	--	4.1E+02	5.3E+01	na	--	--	--	--	--	4.1E+02	5.3E+01	na
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	1.6E+01	1.1E+01	na
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	na
Chrysene ^C	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	na
Copper	0	9.2E+00	6.3E+00	na	--	9.2E+00	6.3E+00	na	--	--	--	--	--	9.2E+00	6.3E+00	na
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	2.2E+01	5.2E+00	na
DDD ^C	0	--	--	na	3.1E+03	--	--	na	3.1E+03	--	--	--	--	--	--	na
DDE ^C	0	--	--	na	2.2E+03	--	--	na	2.2E+03	--	--	--	--	--	--	na
DDT ^C	0	1.1E+00	1.0E-03	na	2.2E+03	1.1E+00	1.0E-03	na	2.2E+03	--	--	--	--	1.1E+00	1.0E-03	na
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	1.0E-01	na
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	1.7E-01	1.7E-01	na
Dibenz(a,h)anthracene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	na
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	na
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	na
3,3-Dichlorobenzidine ^C	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	na
Dichlorobromomethane ^C	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	na
1,2-Dichloroethane ^C	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	na
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	na
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	na
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	na
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,2-Dichloropropane ^C	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	na
1,3-Dichloropropene ^C	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	na
Dieldrin ^C	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	2.4E-01	5.6E-02	na
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	na
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	na
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	na
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	na
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	na
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	na
2,4-Dinitrotoluene ^C	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	na
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	na
1,2-Diphenylhydrazine ^C	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	na
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	2.2E-01	5.6E-02	na
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	2.2E-01	5.6E-02	na
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	2.2E-01	5.6E-02	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	na
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	8.6E-02	3.6E-02	na
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^C	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene ^C	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Alpha-BHC ^C	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Beta-BHC ^C	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclohexane	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Gamma-BHC ^C (Lindane)	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hexachlorocyclopentadiene	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Hexachloroethane ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Hydrogen Sulfide	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	7.1E+01	8.1E+00	na	--	7.1E+01	8.1E+00	na	--	--	--	--	--	--	--	--	--	7.1E+01	8.1E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride ^C	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.3E-02	1.4E+01	na	4.6E+03	1.3E+02	1.4E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.3E+02	1.4E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine ^C	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine ^C	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total ^C	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	--	na	6.4E-04
Pentachlorophenol ^C	0	4.3E+00	3.3E+00	na	3.0E+01	4.3E+00	3.3E+00	na	3.0E+01	--	--	--	--	--	--	--	--	4.3E+00	3.3E+00	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	2.0E+01	5.0E+00	na
Silver	0	1.7E+00	--	na	--	1.7E+00	--	na	--	--	--	--	--	1.7E+00	--	na
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	na
Tetrachloroethylene ^C	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	na
Thallium	0	--	--	na	4.7E+01	--	--	na	4.7E+01	--	--	--	--	--	--	na
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	na
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Toxaphene ^C	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	7.3E-01	2.0E-04	na
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	4.6E-01	7.2E-02	na
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	na
1,1,2-Trichloroethane ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	na
Trichloroethylene ^C	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na
2,4,6-Trichlorophenol ^C	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	na
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Zinc	0	8.3E+01	8.4E+01	na	2.6E+04	8.3E+01	8.4E+01	na	2.6E+04	--	--	--	--	8.3E+01	8.4E+01	na

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = $(0.25(WQC - \text{background conc.}) + \text{background conc.})$ for acute and chronic
= $(0.1(WQC - \text{background conc.}) + \text{background conc.})$ for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	4.9E-01
Chromium III	3.2E+01
Chromium VI	6.4E+00
Copper	3.7E+00
Iron	na
Lead	4.8E+00
Manganese	na
Mercury	4.6E-01
Nickel	8.6E+00
Selenium	3.0E+00
Silver	6.9E-01
Zinc	3.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Mountain Run Monitoring Data
90' Downstream of Culpeper WWTP
(July 2004 - June 2006)

Attachment

Annual					
Temp		pH		Hardness	
7/18/05	29	7/23/04	7.44	9/23/05	112
6/30/06	25.8	8/18/04	7.27	9/21/04	92
7/23/04	25	4/30/05	7.25 90%	6/20/05	84
8/18/04	24	9/21/04	7.24	6/30/06	82
9/23/05	23.2	6/30/06	7.2	7/23/04	75
8/18/05	23	7/18/05	7.2	11/15/05	74
6/20/05	23	10/26/04	7.17	8/18/04	72
5/26/06	21.7	2/24/06	6.96	8/18/05	68
9/21/04	21	8/18/05	6.96	12/16/04	67
5/23/05	20	2/18/05	6.9	10/26/04	64
4/28/06	19.2	9/23/05	6.8	7/18/05	61
10/26/04	17	11/16/04	6.72	5/26/06	60
11/15/05	16	5/23/05	6.7	3/21/05	60
3/28/06	15.2	12/16/04	6.6	11/16/04	59
4/30/05	13	3/28/06	6.58	4/28/06	58
3/21/05	12	3/21/05	6.56	5/23/05	58
11/16/04	12	1/27/06	6.51	1/26/05	58
2/24/06	11	4/28/06	6.49	2/24/06	56
12/16/04	8	5/26/06	6.4	4/30/05	56
2/18/05	7	11/15/05	6.38	3/28/06	50
1/27/06	5.4	6/20/05	6.3 10%	1/27/06	50
1/26/05	5	1/26/05	6.11	2/18/05	50

66.63636 Average

Summer			
Temp		pH	
7/18/05	29	7/23/04	7.44
6/30/06	25.8 90%	8/18/04	7.27
7/23/04	25	9/21/04	7.24
8/18/04	24	6/30/06	7.2
9/23/05	23.2	7/18/05	7.2
8/18/05	23	10/26/04	7.17
6/20/05	23	8/18/05	6.96
9/21/04	21	9/23/05	6.8
10/26/04	17	11/16/04	6.72
11/15/05	16	11/15/05	6.38
11/16/04	12	6/20/05	6.3

Winter			
5/26/06	21.7	4/30/05	7.25
5/23/05	20 90%	2/24/06	6.96
4/28/06	19.2	2/18/05	6.9
3/28/06	15.2	5/23/05	6.7
4/30/05	13	12/16/04	6.6
3/21/05	12	3/28/06	6.58
2/24/06	11	3/21/05	6.56
12/16/04	8	1/27/06	6.51
2/18/05	7	4/28/06	6.49
1/27/06	5.4	5/26/06	6.4
1/26/05	5	1/26/05	6.11

10/11/2006 5:16:44 PM

Facility = Mountain Run WWTP
Chemical = Ammonia - Winter
Chronic averaging period = 30
WLAa = 28
WLAc = 3.7
Q.L. = 0.2
samples/mo. = 30
samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 10
Variance = 36
C.V. = 0.6
97th percentile daily values = 24.3341
97th percentile 4 day average = 16.6379
97th percentile 30 day average = 12.0605
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 7.46537934564035
Average Weekly limit = 4.45313674786387
Average Monthly Limit = 3.7

The data are:

REGIONAL MODELING SYSTEM

VERSION 3.2

DATA FILE SUMMARY

THE NAME OF THE DATA FILE IS: RUN 5.MOD

RUN #1 - SUMMER

THE STREAM NAME IS: Mountain Run
THE RIVER BASIN IS: Rappahannock
THE SECTION NUMBER IS: 4
THE CLASSIFICATION IS: III

Town of Culpeper WWTP @ 4.5 mgd
Mountain Run WWTP @ 0.3 mgd

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: Town of Culpeper AWT

PROPOSED LIMITS ARE:

FLOW = 4.5 MGD
BOD5 = 8 MG/L
TKN = 3 MG/L
D.O. = 6.5 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 2

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON

THE GAUGE NAME IS: See Herman's Memo
GAUGE DRAINAGE AREA = 36.19 SQ.MI.
GAUGE 7Q10 = .1 MGD
DRAINAGE AREA AT DISCHARGE = 36.19 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = N
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 23.9 °C

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: A DISCHARGE ENTERS AT END

SEGMENT LENGTH = 2 MI

SEGMENT WIDTH = 25 FT

SEGMENT DEPTH = .64 FT

SEGMENT VELOCITY = .44 FT/SEC

DRAINAGE AREA AT SEGMENT START = 36.19 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 40.11 SQ.MI.

ELEVATION AT UPSTREAM END = 315 FT

ELEVATION AT DOWNSTREAM END = 305 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y

THE SEGMENT LENGTH IS 50 % POOLS

POOL DEPTH = 1.2 FT

THE SEGMENT LENGTH IS 50 % RIFFLES

RIFFLE DEPTH = .3 FT

THE BOTTOM TYPE = GRAVEL

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = FEW

ALGAE OBSERVED = VISIBLE ONLY ON EDGES

WATER COLORED GREEN (Y/N) = N

THE DISCHARGE AT THE SEGMENT END IS: Mountain Run WWTP

ITS CONCENTRATIONS ARE:

FLOW = .3 MGD

BOD5 = 8 MG/L

TKN = 3 MG/L

D.O. = 6.5 MG/L

SEGMENT INFORMATION

SEGMENT # 2

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 3.1 MI

SEGMENT WIDTH = 25 FT

SEGMENT DEPTH = .64 FT

SEGMENT VELOCITY = .44 FT/SEC

DRAINAGE AREA AT SEGMENT START = 40.11 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 44.51 SQ.MI.

ELEVATION AT UPSTREAM END = 305 FT

ELEVATION AT DOWNSTREAM END = 285 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y

THE SEGMENT LENGTH IS 50 % POOLS

POOL DEPTH = 1.2 FT

THE SEGMENT LENGTH IS 50 % RIFFLES

RIFFLE DEPTH = .3 FT

THE BOTTOM TYPE = GRAVEL

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = FEW

ALGAE OBSERVED = VISIBLE ONLY ON EDGES

WATER COLORED GREEN (Y/N) = N

REGIONAL MODELING SYSTEM

Ver 3.2

(OWRM - 9/90)

06-22-1999 18:00:30

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE Town of Culpeper AWT DISCHARGE

TO Mountain Run

COMMENT: Run 5 Town @4.5, County @.3 mgd - Summer

THE SIMULATION STARTS AT THE Town of Culpeper AWT DISCHARGE

***** PROPOSED PERMIT LIMITS *****

FLOW = 4.5 MGD cBOD5 = 8 Mg/L TKN = 3 Mg/L D.O. = 6.5 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

***** BACKGROUND CONDITIONS *****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.10000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.556 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

***** MODEL PARAMETERS *****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	2.00	0.369	3.000	0.500	0.100	0.000	310.00	23.90	8.396
2	3.10	0.390	3.871	0.500	0.100	0.000	295.00	23.90	8.400

(The K Rates shown are at 20°C ... the model corrects them for temperature.)

TOTAL STREAMFLOW = 4.6000 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	6.523	19.674	0.000
0.100	0.100	6.434	19.480	0.000
0.200	0.200	6.351	19.288	0.000
0.300	0.300	6.274	19.098	0.000
0.400	0.400	6.204	18.910	0.000
0.500	0.500	6.139	18.724	0.000
0.600	0.600	6.079	18.540	0.000
0.700	0.700	6.024	18.357	0.000
0.800	0.800	5.974	18.176	0.000
0.900	0.900	5.928	17.997	0.000
1.000	1.000	5.886	17.820	0.000
1.100	1.100	5.849	17.645	0.000
1.200	1.200	5.814	17.471	0.000
1.300	1.300	5.784	17.299	0.000
1.400	1.400	5.756	17.128	0.000
1.500	1.500	5.732	16.960	0.000
1.600	1.600	5.711	16.793	0.000
1.700	1.700	5.692	16.627	0.000
1.800	1.800	5.676	16.464	0.000
1.900	1.900	5.662	16.302	0.000
2.000	2.000	5.651	16.141	0.000

FOR THE DISCHARGE AT THE END OF SEGMENT 1

DISCHARGER = Mountain Run WWTP

FLOW = .3 MGD cBOD5 = 8 Mg/L TKN = 3 Mg/L D.O. = 6.5 Mg/L

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.0108 MGD

TOTAL STREAMFLOW = 4.9108 MGD
(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	2.000	5.707	16.352	0.000
0.100	2.100	5.733	16.200	0.000
0.200	2.200	5.759	16.048	0.000
0.300	2.300	5.784	15.899	0.000
0.400	2.400	5.809	15.750	0.000
0.500	2.500	5.833	15.603	0.000
0.600	2.600	5.858	15.457	0.000
0.700	2.700	5.882	15.313	0.000
0.800	2.800	5.906	15.170	0.000
0.900	2.900	5.930	15.028	0.000
1.000	3.000	5.953	14.888	0.000
1.100	3.100	5.976	14.749	0.000
1.200	3.200	5.999	14.611	0.000
1.300	3.300	6.022	14.475	0.000
1.400	3.400	6.045	14.340	0.000
1.500	3.500	6.067	14.206	0.000
1.600	3.600	6.089	14.073	0.000
1.700	3.700	6.111	13.942	0.000
1.800	3.800	6.132	13.812	0.000
1.900	3.900	6.154	13.683	0.000
2.000	4.000	6.175	13.555	0.000
2.100	4.100	6.196	13.428	0.000
2.200	4.200	6.217	13.303	0.000
2.300	4.300	6.237	13.179	0.000
2.400	4.400	6.257	13.056	0.000
2.500	4.500	6.278	12.934	0.000
2.600	4.600	6.298	12.813	0.000
2.700	4.700	6.317	12.693	0.000
2.800	4.800	6.337	12.575	0.000
2.900	4.900	6.356	12.457	0.000
3.000	5.000	6.376	12.341	0.000
3.100	5.100	6.394	12.226	0.000

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
06-22-1999 18:01:25

DATA FILE = RUN 5.MOD

REGIONAL MODELING SYSTEM

VERSION 3.2

DATA FILE SUMMARY

THE NAME OF THE DATA FILE IS: RUN 11.MOD

RUN #2 - WINTER

THE STREAM NAME IS: Mountain Run
THE RIVER BASIN IS: Rappahannock
THE SECTION NUMBER IS: 4
THE CLASSIFICATION IS: III

Town of Culpeper WWTP @ 4.5 mgd
Mountain Run WWTP @ 0.3 mgd

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: Town of Culpeper AWT

PROPOSED LIMITS ARE:

FLOW = 4.5 MGD
BOD5 = 15 MG/L
TKN = 8 MG/L
D.O. = 6.5 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED =

7Q10 WILL BE CALCULATED BY: DRAINAGE

THE GAUGE NAME IS: See Herman's

GAUGE DRAINAGE AREA = 36.1

GAUGE 7Q10 = 4.0

DRAINAGE AREA AT DISCHARGE = 36.1

STREAM A DRY DITCH AT DISCHARGE (Y/N) = N

ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 19.8 °C

*His model
isn't here -*

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE Town of Culpeper AWT DISCHARGE

TO Mountain Run

COMMENT: Run 11 Town @4.5, County @.3 mgd - Winter

THE SIMULATION STARTS AT THE Town of Culpeper AWT DISCHARGE

***** PROPOSED PERMIT LIMITS *****

FLOW = 4.5 MGD cBOD5 = 15 Mg/L TKN = 8 Mg/L D.O. = 6.5 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.021 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

***** BACKGROUND CONDITIONS *****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 4.03000 MGD

THE DISSOLVED OXYGEN OF THE STREAM IS 8.129 Mg/L

THE BACKGROUND cBOD_u OF THE STREAM IS 5 Mg/L

THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

***** MODEL PARAMETERS *****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	2.00	0.470	3.000	0.700	0.200	0.000	310.00	19.80	9.032
2	3.10	0.496	3.871	0.700	0.200	0.000	295.00	19.80	9.037

(The K Rates shown are at 20°C ... the model corrects them for temperature.)

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: A DISCHARGE ENTERS AT END

SEGMENT LENGTH = 2 MI

SEGMENT WIDTH = 25 FT

SEGMENT DEPTH = .94 FT

SEGMENT VELOCITY = .56 FT/SEC

DRAINAGE AREA AT SEGMENT START = 36.19 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 40.11 SQ.MI.

ELEVATION AT UPSTREAM END = 315 FT

ELEVATION AT DOWNSTREAM END = 305 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y

THE SEGMENT LENGTH IS 50 % POOLS

POOL DEPTH = 1.4 FT

THE SEGMENT LENGTH IS 50 % RIFFLES

RIFFLE DEPTH = .4 FT

THE BOTTOM TYPE = GRAVEL

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = FEW

ALGAE OBSERVED = VISIBLE ONLY ON EDGES

WATER COLORED GREEN (Y/N) = N

THE DISCHARGE AT THE SEGMENT END IS: County of Culpeper WWTP

ITS CONCENTRATIONS ARE:

FLOW = .3 MGD

BOD5 = 15 MG/L

TKN = 8 MG/L

D.O. = 6.5 MG/L

SEGMENT INFORMATION

SEGMENT # 2

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 3.1 MI

SEGMENT WIDTH = 25 FT

SEGMENT DEPTH = .94 FT

SEGMENT VELOCITY = .56 FT/SEC

DRAINAGE AREA AT SEGMENT START = 40.11 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 44.51 SQ.MI.

ELEVATION AT UPSTREAM END = 305 FT

ELEVATION AT DOWNSTREAM END = 285 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = Y

THE SEGMENT LENGTH IS 50 % POOLS

POOL DEPTH = 1.4 FT

THE SEGMENT LENGTH IS 50 % RIFFLES

RIFFLE DEPTH = .4 FT

THE BOTTOM TYPE = GRAVEL

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = FEW

ALGAE OBSERVED = VISIBLE ONLY ON EDGES

WATER COLORED GREEN (Y/N) = N

REGIONAL MODELING SYSTEM

Ver 3.2

(OWRM - 9/90)

06-22-1999 18:20:25

modout
 "Model Run For U:\Water Permits\VPDES Program\Facility Archive\Mountain Run STP
 (VA0090212)\1.5 MGD DO Model (Summer) - 2005.mod On 4/1/2005 5:15:26 PM"

"Model is for MOUNTAIN RUN."

"Model starts at the TOWN OF CULPEPER STP discharge."

RUN #3 - SUMMER

Town of Culpeper WWTP @ 4.5 mgd
 Mountain Run WWTP @ 1.5 mgd

"Background Data"

"7Q10"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.1,	2,	0,	7.555,	23.9

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.5,	8,	3,	6.5,	23.9

"Hydraulic Information for Segment 1"

"Length"	"width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
2,	25,	.75,	.44

"Initial Mix Values for Segment 1"

"Flow"	"DO"	"cBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.6,	6.523,	19.674,	0,	8.396,	23.9

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
.5,	.598,	3,	3.291,	.1,	.135,	0,	0

"Output for Segment 1"

"Segment starts at TOWN OF CULPEPER STP"

"Total"	"Segm."	"Dist."	"Dist."	"DO"	"cBOD"	"nBOD"
"(mi)"	"(mi)"	"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	0,	0,	6.523,	19.674,	0
.1,	.1,	.1,	.1,	6.448,	19.511,	0
.2,	.2,	.2,	.2,	6.377,	19.35,	0
.3,	.3,	.3,	.3,	6.311,	19.19,	0
.4,	.4,	.4,	.4,	6.249,	19.031,	0
.5,	.5,	.5,	.5,	6.191,	18.874,	0
.6,	.6,	.6,	.6,	6.137,	18.718,	0
.7,	.7,	.7,	.7,	6.087,	18.563,	0
.8,	.8,	.8,	.8,	6.04,	18.409,	0
.9,	.9,	.9,	.9,	5.996,	18.257,	0
1,	1,	1,	1,	5.956,	18.106,	0
1.1,	1.1,	1.1,	1.1,	5.919,	17.956,	0
1.2,	1.2,	1.2,	1.2,	5.884,	17.807,	0
1.3,	1.3,	1.3,	1.3,	5.852,	17.66,	0
1.4,	1.4,	1.4,	1.4,	5.823,	17.514,	0
1.5,	1.5,	1.5,	1.5,	5.796,	17.369,	0
1.6,	1.6,	1.6,	1.6,	5.772,	17.225,	0
1.7,	1.7,	1.7,	1.7,	5.75,	17.083,	0
1.8,	1.8,	1.8,	1.8,	5.73,	16.942,	0
1.9,	1.9,	1.9,	1.9,	5.712,	16.802,	0
2,	2,	2,	2,	5.696,	16.663,	0

"Discharge/Tributary Input Data for Segment 2"

"Flow"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"

1.5, 8, 3, ,6.5, modout
23.9

"Incremental Flow Input Data for Segment 2"

"Flow", "cBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.011, 2, 0, ,7.56, 23.9

"Hydraulic Information for Segment 2"

"Length", "width", "Depth", "Velocity"
"(mi)", "(ft)", "(ft)", "(ft/sec)"
3.1, 25, .83, .5

"Initial Mix values for Segment 2"

"Flow", "DO", "cBOD", "nBOD", "DOSat", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
6.111, 5.897, 17.461, 0, 8.4, 23.9

"Rate Constants for Segment 2. - (All units Per Day)"

"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
.5, .598, 3.871, 4.246, .1, .135, 0, 0

"Output for Segment 2"

"Segment starts at MOUNTAIN RUN STP"

"Total",	"Segm."	"DO",	"cBOD",	"nBOD"
"Dist.",	"Dist.",	"(mg/l)",	"(mg/l)",	"(mg/l)"
"(mi)",	"(mi)",			
2,	0,	5.897,	17.461,	0
2.1,	.1,	5.9,	17.334,	0
2.2,	.2,	5.903,	17.208,	0
2.3,	.3,	5.907,	17.083,	0
2.4,	.4,	5.912,	16.959,	0
2.5,	.5,	5.917,	16.835,	0
2.6,	.6,	5.923,	16.712,	0
2.7,	.7,	5.93,	16.59,	0
2.8,	.8,	5.937,	16.469,	0
2.9,	.9,	5.945,	16.349,	0
3,	1,	5.953,	16.23,	0
3.1,	1.1,	5.962,	16.112,	0
3.2,	1.2,	5.971,	15.995,	0
3.3,	1.3,	5.98,	15.879,	0
3.4,	1.4,	5.99,	15.763,	0
3.5,	1.5,	6,	15.648,	0
3.6,	1.6,	6.01,	15.534,	0
3.7,	1.7,	6.021,	15.421,	0
3.8,	1.8,	6.032,	15.309,	0
3.9,	1.9,	6.043,	15.198,	0
4,	2,	6.054,	15.087,	0
4.1,	2.1,	6.066,	14.977,	0
4.2,	2.2,	6.078,	14.868,	0
4.3,	2.3,	6.09,	14.76,	0
4.4,	2.4,	6.102,	14.652,	0
4.5,	2.5,	6.114,	14.545,	0
4.6,	2.6,	6.126,	14.439,	0
4.7,	2.7,	6.139,	14.334,	0
4.8,	2.8,	6.152,	14.23,	0
4.9,	2.9,	6.165,	14.126,	0
5,	3,	6.178,	14.023,	0
5.1,	3.1,	6.191,	13.921,	0

"END OF FILE"

modout
 "Model Run For U:\Water Permits\VPDES Program\Facility Archive\Mountain Run STP
 (VA0090212)\1.5 MGD DO Model (Winter) - 2005.mod On 4/1/2005 5:11:23 PM"

"Model is for MOUNTAIN RUN."

"Model starts at the TOWN OF CULPEPER STP discharge."

RUN #4 - WINTER

"Background Data"

"7Q10"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.03,	2,	0,	8.416,	18

Town of Culpeper WWTP @ 4.5 mgd
 Mountain Run WWTP @ 1.5 mgd

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.5,	15,	8,	6.5,	19.8

"Hydraulic Information for Segment 1"

"Length"	"width"	"Depth"	"velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
2,	25,	.94,	.56

"Initial Mix values for Segment 1"

"Flow"	"DO"	"CBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
8.53,	7.405,	22.145,	11.421,	9.18,	18.94959

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
.7,	.667,	3,	2.926,	.2,	.184,	0,	0

"Output for Segment 1"

"Segment starts at TOWN OF CULPEPER STP"

"Total"	"Segm."	"DO"	"cBOD"	"nBOD"
"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	7.405,	22.145,	11.421
.1,	.1,	7.28,	21.984,	11.398
.2,	.2,	7.16,	21.825,	11.375
.3,	.3,	7.045,	21.667,	11.352
.4,	.4,	6.935,	21.51,	11.329
.5,	.5,	6.83,	21.354,	11.306
.6,	.6,	6.729,	21.199,	11.283
.7,	.7,	6.632,	21.045,	11.26
.8,	.8,	6.54,	20.892,	11.237
.9,	.9,	6.452,	20.74,	11.214
1,	1,	6.367,	20.59,	11.191
1.1,	1.1,	6.286,	20.441,	11.168
1.2,	1.2,	6.209,	20.293,	11.146
1.3,	1.3,	6.135,	20.146,	11.124
1.4,	1.4,	6.065,	20,	11.102
1.5,	1.5,	5.998,	19.855,	11.08
1.6,	1.6,	5.934,	19.711,	11.058
1.7,	1.7,	5.873,	19.568,	11.036
1.8,	1.8,	5.815,	19.426,	11.014
1.9,	1.9,	5.76,	19.285,	10.992
2,	2,	5.708,	19.145,	10.97

"Discharge/Tributary Input Data for Segment 2"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"

1.5, 12, 8, ,6.5, modout
19.8

"Incremental Flow Input Data for Segment 2"
"Flow", "cBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.437, 2, 0, ,8.253, 18

"Hydraulic Information for Segment 2"
"Length", "width", "Depth", "Velocity"
"(mi)", "(ft)", "(ft)", "(ft/sec)"
3.1, 25, 1, .6

"Initial Mix values for Segment 2"
"Flow", "DO", "cBOD", "nBOD", "DOSat", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
10.467, 5.928, 20.11, 12.043, 9.17, 19.03181

"Rate Constants for Segment 2. - (All units Per Day)"
"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
.7, .67, 3.871, 3.783, .2, .186, 0, 0

"Output for Segment 2"
"Segment starts at MOUNTAIN RUN STP"
"Total", "Segm."
"Dist.", "Dist.", "DO", "cBOD", "nBOD"
"(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"
2, 0, 5.928, 20.11, 12.043
2.1, .1, 5.894, 19.973, 12.02
2.2, .2, 5.862, 19.837, 11.997
2.3, .3, 5.833, 19.702, 11.974
2.4, .4, 5.806, 19.568, 11.951
2.5, .5, 5.781, 19.435, 11.928
2.6, .6, 5.757, 19.303, 11.905
2.7, .7, 5.735, 19.172, 11.883
2.8, .8, 5.715, 19.042, 11.861
2.9, .9, 5.697, 18.913, 11.839
3, 1, 5.68, 18.784, 11.817
3.1, 1.1, 5.665, 18.656, 11.795
3.2, 1.2, 5.651, 18.529, 11.773
3.3, 1.3, 5.639, 18.403, 11.751
3.4, 1.4, 5.628, 18.278, 11.729
3.5, 1.5, 5.618, 18.154, 11.707
3.6, 1.6, 5.61, 18.031, 11.685
3.7, 1.7, 5.603, 17.908, 11.663
3.8, 1.8, 5.597, 17.786, 11.641
3.9, 1.9, 5.592, 17.665, 11.619
4, 2, 5.588, 17.545, 11.597
4.1, 2.1, 5.585, 17.426, 11.575
4.2, 2.2, 5.583, 17.308, 11.553
4.3, 2.3, 5.582, 17.19, 11.531
4.4, 2.4, 5.582, 17.073, 11.509
4.5, 2.5, 5.582, 16.957, 11.487
4.6, 2.6, 5.583, 16.842, 11.465
4.7, 2.7, 5.585, 16.728, 11.443
4.8, 2.8, 5.588, 16.614, 11.421
4.9, 2.9, 5.591, 16.501, 11.399
5, 3, 5.595, 16.389, 11.377
5.1, 3.1, 5.6, 16.278, 11.356

"END OF FILE"

6.0 - 1.25 - 1.25(3)

"Model Run For U:\Water Permits\VPDES Program\Facility Archive\Mountain Run STP
(VA0090212)\2006 Modification\Model\6.0 - 1.25 - 1.25 (3).mod On 8/21/2006 10:37:05
AM"

"Model is for MOUNTAIN RUN."

"Model starts at the TOWN OF CULPEPER AWT discharge."

<p style="text-align: center;">SUMMER Town @ 6.0 MGD High School @ 1.25 MGD Mountain Run @ 1.25 MGD</p>

"Background Data"

"7Q10", "CBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.1, 2, 0, 7.073, 28

"Discharge/Tributary Input Data for Segment 1"

"Flow", "CBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
6, 8, 3, 6.5, 28

"Hydraulic Information for Segment 1"

"Length", "width", "Depth", "velocity"
"(mi)", "(ft)", "(ft)", "(ft/sec)"
2, 38, .7, .3

"Initial Mix Values for Segment 1"

"Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
6.1, 6.509, 19.754, 0, 7.862, 28

"Rate Constants for Segment 1. - (All units Per Day)"

"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
.5, .722, 6, 7.254, .1, .185, 0, 0

"Output for Segment 1"

"Segment starts at TOWN OF CULPEPER AWT"

"Total", "Segm."	"Dist.", "Dist."	"DO", "DO"	"cBOD", "cBOD"	"nBOD", "nBOD"
"(mi)", "(mi)"	"(mi)", "(mi)"	"(mg/l)", "(mg/l)"	"(mg/l)", "(mg/l)"	"(mg/l)", "(mg/l)"
0,	0,	6.509,	19.754,	0
.1,	.1,	6.427,	19.466,	0
.2,	.2,	6.36,	19.182,	0
.3,	.3,	6.306,	18.902,	0
.4,	.4,	6.263,	18.626,	0
.5,	.5,	6.23,	18.354,	0
.6,	.6,	6.205,	18.086,	0
.7,	.7,	6.187,	17.822,	0
.8,	.8,	6.175,	17.562,	0
.9,	.9,	6.168,	17.306,	0
1,	1,	6.166,	17.053,	0
1.1,	1.1,	6.168,	16.804,	0
1.2,	1.2,	6.173,	16.559,	0
1.3,	1.3,	6.18,	16.317,	0
1.4,	1.4,	6.19,	16.079,	0
1.5,	1.5,	6.201,	15.844,	0
1.6,	1.6,	6.214,	15.613,	0
1.7,	1.7,	6.229,	15.385,	0
1.8,	1.8,	6.245,	15.16,	0
1.9,	1.9,	6.261,	14.939,	0
2,	2,	6.278,	14.721,	0

"Discharge/Tributary Input Data for Segment 2"

"Flow", "CBOD5", "TKN", "DO", "Temp"
Page 1

6.0 - 1.25 - 1.25(3)
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 1.25, 8, 3, 6.5, 28

"Incremental Flow Input Data for Segment 2"
 "Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 .032, 2, 0, 7.085, 28

"Hydraulic Information for Segment 2"
 "Length", "width", "Depth", "velocity"
 "(mi)", "(ft)", "(ft)", "(ft/sec)"
 5, 38, .9, .3

"Initial Mix Values for Segment 2"
 "Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 7.382, 6.319, 15.573, 0, 7.872, 28

"Rate Constants for Segment 2. - (All units Per Day)"
 "k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
 .5, .722, 6, 7.254, .1, .185, 0, 0

"Output for Segment 2"
 "Segment starts at HIGH SCHOOL WWTP"
 "Total", "Segm."
 "Dist.", "Dist.", "DO", "CBOD", "nBOD"
 "(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"
 2, 0, 6.319, 15.573, 0
 2.1, .1, 6.321, 15.346, 0
 2.2, .2, 6.326, 15.122, 0
 2.3, .3, 6.333, 14.901, 0
 2.4, .4, 6.342, 14.683, 0
 2.5, .5, 6.353, 14.469, 0
 2.6, .6, 6.365, 14.258, 0
 2.7, .7, 6.378, 14.05, 0
 2.8, .8, 6.393, 13.845, 0
 2.9, .9, 6.408, 13.643, 0
 3, 1, 6.424, 13.444, 0
 3.1, 1.1, 6.44, 13.248, 0
 3.2, 1.2, 6.457, 13.055, 0
 3.3, 1.3, 6.474, 12.864, 0
 3.4, 1.4, 6.491, 12.676, 0
 3.5, 1.5, 6.509, 12.491, 0
 3.6, 1.6, 6.527, 12.309, 0
 3.7, 1.7, 6.545, 12.129, 0
 3.8, 1.8, 6.563, 11.952, 0
 3.9, 1.9, 6.581, 11.778, 0
 4, 2, 6.598, 11.606, 0
 4.1, 2.1, 6.615, 11.437, 0
 4.2, 2.2, 6.632, 11.27, 0
 4.3, 2.3, 6.649, 11.105, 0
 4.4, 2.4, 6.666, 10.943, 0
 4.5, 2.5, 6.683, 10.783, 0
 4.6, 2.6, 6.7, 10.626, 0
 4.7, 2.7, 6.717, 10.471, 0
 4.8, 2.8, 6.734, 10.318, 0
 4.9, 2.9, 6.75, 10.167, 0
 5, 3, 6.766, 10.019, 0
 5.1, 3.1, 6.782, 9.873, 0
 5.2, 3.2, 6.798, 9.729, 0
 5.3, 3.3, 6.813, 9.587, 0
 5.4, 3.4, 6.828, 9.447, 0
 5.5, 3.5, 6.843, 9.309, 0

6.0 - 1.25 - 1.25(3)

5.6,	3.6,	6.858,	9.173,	0
5.7,	3.7,	6.873,	9.039,	0
5.8,	3.8,	6.888,	8.907,	0
5.9,	3.9,	6.902,	8.777,	0
6,	4,	6.916,	8.649,	0
6.1,	4.1,	6.93,	8.523,	0
6.2,	4.2,	6.944,	8.399,	0
6.3,	4.3,	6.957,	8.276,	0
6.4,	4.4,	6.97,	8.155,	0
6.5,	4.5,	6.983,	8.036,	0
6.6,	4.6,	6.996,	7.919,	0
6.7,	4.7,	7.009,	7.803,	0
6.8,	4.8,	7.022,	7.689,	0
6.9,	4.9,	7.034,	7.577,	0
7,	5,	7.046,	7.466,	0

"Discharge/Tributary Input Data for Segment 3"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
1.25,	8,	3,	6.5,	28

"Incremental Flow Input Data for Segment 3"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.203,	2,	0,	7.093,	28

"Hydraulic Information for Segment 3"

"Length"	"width"	"Depth"	"velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
1.5,	38,	1,	.3

"Initial Mix Values for Segment 3"

"Flow"	"DO"	"CBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
8.835,	6.97,	9.183,	0,	7.881,	28

"Rate Constants for Segment 3. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
.3,	.433,	6,	7.254,	.1,	.185,	0,	0

"Output for Segment 3"

"Segment starts at MOUNTAIN RUN WWTP"

"Total"	"Segm."	"DO"	"CBOD"	"nBOD"
"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
7,	0,	6.97,	9.183,	0
7.1,	.1,	7.02,	9.102,	0
7.2,	.2,	7.064,	9.022,	0
7.3,	.3,	7.093,	8.943,	0
7.4,	.4,	7.093,	8.864,	0
7.5,	.5,	7.093,	8.786,	0
7.6,	.6,	7.093,	8.709,	0
7.7,	.7,	7.093,	8.632,	0
7.8,	.8,	7.093,	8.556,	0
7.9,	.9,	7.093,	8.481,	0
8,	1,	7.093,	8.406,	0
8.1,	1.1,	7.093,	8.332,	0
8.2,	1.2,	7.093,	8.259,	0
8.3,	1.3,	7.093,	8.186,	0
8.4,	1.4,	7.093,	8.114,	0

8.5, 1.5, 7.093, 8.043, $\frac{6.0 - 1.25 - 1.25(3)}{0}$

"END OF FILE"

6.0 - 1.25 - 1.25 (4) Seasonal

"***SEASONAL RUN***"

"Wet Season is from December to May."

"Model Run For U:\Water Permits\VPDES Program\Facility Archive\Mountain Run STP
(VA0090212)\2006 Modification\Model\6.0 - 1.25 - 1.25 (3).mod On 9/25/2006 11:40:27
AM"

"Model is for MOUNTAIN RUN."

"Model starts at the TOWN OF CULPEPER AWT discharge."

"Background Data"

"7Q10"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.152,	2,	0,	8.091,	20

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
6,	12,	8,	6.5,	20

"Hydraulic Information for Segment 1"

"Length"	"width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
2,	38,	8.959033,	4.613949E-02

"Initial Mix values for Segment 1"

"Flow"	"DO"	"CBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
10.152,	7.151,	19.775,	12.796,	8.993,	20

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
.5,	.5,	6,	6,	.2,	.2,	0,	0

"Output for Segment 1"

"Segment starts at TOWN OF CULPEPER AWT"

"Total"	"Segm."	"DO"	"CBOD"	"nBOD"
"Dist."	"Dist."	"(mg/l)"	"(mg/l)"	"(mg/l)"
"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	7.151,	19.775,	12.796
.1,	.1,	7.06,	18.508,	12.461
.2,	.2,	7.081,	17.322,	12.135
.3,	.3,	7.148,	16.212,	11.818
.4,	.4,	7.233,	15.173,	11.509
.5,	.5,	7.323,	14.201,	11.208
.6,	.6,	7.412,	13.291,	10.915
.7,	.7,	7.497,	12.439,	10.63
.8,	.8,	7.578,	11.642,	10.352
.9,	.9,	7.655,	10.896,	10.081
1,	1,	7.728,	10.198,	9.817
1.1,	1.1,	7.796,	9.545,	9.56
1.2,	1.2,	7.86,	8.933,	9.31
1.3,	1.3,	7.92,	8.361,	9.067
1.4,	1.4,	7.977,	7.825,	8.83
1.5,	1.5,	8.031,	7.324,	8.599
1.6,	1.6,	8.081,	6.855,	8.374
1.7,	1.7,	8.094,	6.416,	8.155
1.8,	1.8,	8.094,	6.005,	7.942
1.9,	1.9,	8.094,	5.62,	7.734
2,	2,	8.094,	5.26,	7.532

WINTER
Town @ 6.0 MGD
High School @ 1.25 MGD
Mountain Run @ 1.25 MGD

6.0 - 1.25 - 1.25 (4) Seasonal

"Discharge/Tributary Input Data for Segment 2"

"Flow", "cBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 1.25, 12, 8, ,6.5, 20

"Incremental Flow Input Data for Segment 2"

"Flow", "cBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 1.32864, 2, 0, ,8.104, 20

"Hydraulic Information for Segment 2"

"Length", "width", "Depth", "velocity"
 "(mi)", "(ft)", "(ft)", "(ft/sec)"
 5, 38, 11.51876, 4.500149E-02

"Initial Mix values for Segment 2"

"Flow", "DO", "cBOD", "nBOD", "DOSat", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 12.7306, 7.939, 7.662, 8.132, 9.004, 20

"Rate Constants for Segment 2. - (All units Per Day)"

"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
 .3, .3, 6, 6, .15, .15, 0, 0

"Output for Segment 2"

"Segment starts at HIGH SCHOOL WWTP"

"Total", "Segm."		"Dist.", "Dist."			"DO", "cBOD", "nBOD"		
"(mi)", "(mi)"		"(mg/l)", "(mg/l)", "(mg/l)"					
2,	0,	7.939,	7.662,	8.132			
2.1,	.1,	8.104,	7.356,	7.968			
2.2,	.2,	8.104,	7.062,	7.807			
2.3,	.3,	8.104,	6.78,	7.65			
2.4,	.4,	8.104,	6.509,	7.496			
2.5,	.5,	8.104,	6.249,	7.345			
2.6,	.6,	8.104,	6,	7.197			
2.7,	.7,	8.104,	5.76,	7.052			
2.8,	.8,	8.104,	5.53,	6.91			
2.9,	.9,	8.104,	5.309,	6.771			
3,	1,	8.104,	5.097,	6.634			
3.1,	1.1,	8.104,	5,	6.5			
3.2,	1.2,	8.104,	5,	6.369			
3.3,	1.3,	8.104,	5,	6.241			
3.4,	1.4,	8.104,	5,	6.115			
3.5,	1.5,	8.104,	5,	5.992			
3.6,	1.6,	8.104,	5,	5.871			
3.7,	1.7,	8.104,	5,	5.753			
3.8,	1.8,	8.104,	5,	5.637			
3.9,	1.9,	8.104,	5,	5.523			
4,	2,	8.104,	5,	5.412			
4.1,	2.1,	8.104,	5,	5.303			
4.2,	2.2,	8.104,	5,	5.196			
4.3,	2.3,	8.104,	5,	5.091			
4.4,	2.4,	8.104,	5,	4.988			
4.5,	2.5,	8.104,	5,	4.887			
4.6,	2.6,	8.104,	5,	4.788			
4.7,	2.7,	8.104,	5,	4.691			
4.8,	2.8,	8.104,	5,	4.596			
4.9,	2.9,	8.104,	5,	4.503			
5,	3,	8.104,	5,	4.412			
5.1,	3.1,	8.104,	5,	4.323			
5.2,	3.2,	8.104,	5,	4.236			
5.3,	3.3,	8.104,	5,	4.151			

6.0 - 1.25 - 1.25 (4) Seasonal

5.4,	3.4,	8.104,	5,	4.067
5.5,	3.5,	8.104,	5,	3.985
5.6,	3.6,	8.104,	5,	3.905
5.7,	3.7,	8.104,	5,	3.826
5.8,	3.8,	8.104,	5,	3.749
5.9,	3.9,	8.104,	5,	3.673
6,	4,	8.104,	5,	3.599
6.1,	4.1,	8.104,	5,	3.526
6.2,	4.2,	8.104,	5,	3.455
6.3,	4.3,	8.104,	5,	3.385
6.4,	4.4,	8.104,	5,	3.317
6.5,	4.5,	8.104,	5,	3.25
6.6,	4.6,	8.104,	5,	3.184
6.7,	4.7,	8.104,	5,	3.12
6.8,	4.8,	8.104,	5,	3.057
6.9,	4.9,	8.104,	5,	2.995
7,	5,	8.104,	5,	2.935

"Discharge/Tributary Input Data for Segment 3"

"Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 1.25, 12, 8, ,6.5, 20

"Incremental Flow Input Data for Segment 3"

"Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 8.42856, 2, 0, ,8.113, 20

"Hydraulic Information for Segment 3"

"Length", "width", "Depth", "velocity"
 "(mi)", "(ft)", "(ft)", "(ft/sec)"
 1.5, 38, 12.79862, 7.129277E-02

"Initial Mix Values for Segment 3"

"Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 22.4092, 8.018, 6.395, 2.875, 9.015, 20

"Rate Constants for Segment 3. - (All units Per Day)"

"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
 .3, .3, 6, 6, .1, .1, 0, 0

"Output for Segment 3"

"Segment starts at MOUNTAIN RUN WWTP"

"Total",	"Segm."	"Dist.",	"Dist.",	"DO",	"CBOD",	"nBOD"
"(mi)",	"(mi)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"(mg/l)"
7,	0,	8.018,	6.395,	2.875		
7.1,	.1,	8.113,	6.233,	2.85		
7.2,	.2,	8.113,	6.075,	2.826		
7.3,	.3,	8.113,	5.921,	2.802		
7.4,	.4,	8.113,	5.771,	2.778		
7.5,	.5,	8.113,	5.624,	2.754		
7.6,	.6,	8.113,	5.481,	2.73		
7.7,	.7,	8.113,	5.342,	2.707		
7.8,	.8,	8.113,	5.206,	2.684		
7.9,	.9,	8.113,	5.074,	2.661		
8,	1,	8.113,	5,	2.638		
8.1,	1.1,	8.113,	5,	2.615		
8.2,	1.2,	8.113,	5,	2.593		

8.3,	1.3,	8.113,	5,	2.571	6.0 - 1.25 - 1.25 (4) Seasonal
8.4,	1.4,	8.113,	5,	2.549	
8.5,	1.5,	8.113,	5,	2.527	

"END OF FILE"

Page 3 - Follow directions to develop a site specific ACR (Acute to Chronic Ratio)

To determine Acute/Chronic Ratio (ACR), insert usable data below. Usable data is defined as valid paired test results, acute and chronic, tested at the same temperature, same species. The chronic NOEC must be less than the acute LC₅₀, since the ACR divides the LC₅₀ by the NOEC. LC₅₀'s >100% should not be used.

Table 1. ACR using Vertebrate data

Set #	LC ₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog ACR to Use
1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA

ACR for vertebrate data:

0

Table 1. Result:
Table 2. Result:

Vertebrate ACR
Invertebrate ACR
Lowest ACR

0
0
Default to 10

Table 2. ACR using Invertebrate data

Set #	LC ₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog ACR to Use
1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA
10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A NO DATA

ACR for invertebrate data:

0

Table 4.

DILUTION SERIES TO RECOMMEND

	Monitoring		Limit	
	% Effluent	TUc	% Effluent	TUc
Dilution series based on data mean	100	1.0	66	1.5151515
Dilution series to use for limit	0.5		0.8124038	
Dilution series to recommend:	100.0	1.00	100.0	1.00
	50.0	2.00	81.2	1.23
	25.0	4.00	66.0	1.52
	12.5	8.00	53.6	1.87
	6.25	16.00	43.6	2.30
Extra dilutions if needed	3.12	32.05	35.4	2.83
	1.56	64.10	28.7	3.48

Table 3. Convert LC₅₀'s and NOEC's to Chronic TU's for use in WLA EXE

ACR used: 10

	Enter LC ₅₀	TUc	Enter NOEC	TUc
1	NO DATA	NO DATA	NO DATA	NO DATA
2	NO DATA	NO DATA	NO DATA	NO DATA
3	NO DATA	NO DATA	NO DATA	NO DATA
4	NO DATA	NO DATA	NO DATA	NO DATA
5	NO DATA	NO DATA	NO DATA	NO DATA
6	NO DATA	NO DATA	NO DATA	NO DATA
7	NO DATA	NO DATA	NO DATA	NO DATA
8	NO DATA	NO DATA	NO DATA	NO DATA
9	NO DATA	NO DATA	NO DATA	NO DATA
10	NO DATA	NO DATA	NO DATA	NO DATA
11	NO DATA	NO DATA	NO DATA	NO DATA
12	NO DATA	NO DATA	NO DATA	NO DATA
13	NO DATA	NO DATA	NO DATA	NO DATA
14	NO DATA	NO DATA	NO DATA	NO DATA
15	NO DATA	NO DATA	NO DATA	NO DATA
16	NO DATA	NO DATA	NO DATA	NO DATA
17	NO DATA	NO DATA	NO DATA	NO DATA
18	NO DATA	NO DATA	NO DATA	NO DATA
19	NO DATA	NO DATA	NO DATA	NO DATA
20	NO DATA	NO DATA	NO DATA	NO DATA

If WLA EXE determines that an acute limit is needed, you need to convert the TUc answer you get to TUa and then an LC₅₀, enter it here:

NO DATA

%LC₅₀

TUa

Cell: J9

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: K18

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: J22

Comment: Remember to change the "N" to "Y" if you have ratos entered, otherwise, they won't be used in the calculations.

Cell: C40

Comment: If you have entered data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "Y" in cell E21

Cell: C41

Comment: If you have entered data to calculate an effluent specific CV on page 2, and this is still defaulted to "0.6", make sure you have selected "Y" in cell E20

Cell: L48

Comment: See Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G62

Comment: Vertebrates are:
Pinnephalas promelas
Onchorynchus mykiss
Cyprinodon variegatus

Cell: J62

Comment: Invertebrates are:
Ceriodaphnia dubia
Mysidopsis bahia

Cell: C117

Comment: Vertebrates are:
Pinnephalas promelas
Cyprinodon variegatus

Cell: M119

Comment: The ACR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "Y" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data.

Cell: M121

Comment: If you are only concerned with acute data, you can enter it in the NOEC column for conversion and the number calculated will be equivalent to the T_{Ua}. The calculation is the same. 100/NOEC = T_{Uc} or 100/LC50 = T_{Ua}.

Cell: C138

Comment: Invertebrates are:
Ceriodaphnia dubia
Mysidopsis bahia

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Culpeper County, Virginia.

PUBLIC COMMENT PERIOD: TBD, 2010 to 5:00 p.m. on TBD, 2010

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Culpeper County Board of Supervisors, 118 West Davis Street, Suite 100, Culpeper, VA 22701 VA0090212

NAME AND ADDRESS OF FACILITY: Mountain Run STP, Stevensburg Rd, Culpeper, VA 22701

PROJECT DESCRIPTION: Culpeper County has applied for a reissuance of a permit for the public Mountain Run STP. The applicant proposes to release treated sewage wastewaters from residential areas at a proposed rates of 0.3, 0.6, 1.0, 1.25, 1.5, 1.7, 2.0 or 2.5 million gallons per day into a water body. Sludge from the treatment process will be disposed of in the County landfill. The facility proposes to release the treated sewage wastewater in Mountain Run in Culpeper County in the Rappahannock watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD, Ammonia as Nitrogen, TKN, Total Suspended Solids, Dissolved Oxygen, E. coli, Total Nitrogen, and Total Phosphorus. Monitoring is included for whole effluent toxicity.

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Alison Thompson

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3834 E-mail: alison.thompson@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Mountain Run STP
NPDES Permit Number:	VA0090212
Permit Writer Name:	Alison Thompson
Date:	May 21, 2010

Major ☒Minor ☐Industrial ☐Municipal ☒**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis? Facility is un-built		X	
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? Facility is un-built		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

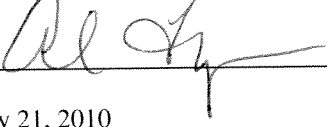
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41 <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> Duty to comply Duty to reapply Need to halt or reduce activity not a defense Duty to mitigate Proper O & M Permit actions </div> <div style="width: 30%;"> Property rights Duty to provide information Inspections and entry Monitoring and records Signatory requirement Bypass Upset </div> <div style="width: 30%;"> Reporting Requirements Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24-Hour reporting Other non-compliance </div> </div>			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Alison Thompson
Title	Water Permits Technical Reviewer
Signature	 <hr/>
Date	May 21, 2010